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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NOVAKOV DAVIS & MUNCK
A PROFESSIONAL CORPORATION
900 THREE GALLERIA TOWER
13155 NOEL ROAD
DALLAS, TX 75240

EXAMINER	
CHOW, CHARLES CHIANG	

ART UNIT	PAPER NUMBER
2685	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/038,878	COLLINS, DAVID ALLAN
	Examiner	Art Unit
	Charles Chow	2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Detailed Action

Specification

1. The abstract of the disclosure is objected to because the abstract is too long, near 180 words.

   Correction is required. See MPEP§ 608.01(b).

   Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.
   The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

2. Claim 13 is objected to because of the following informalities: In claim 13, the "are" in lines 3 is a typo. It should be "area". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-6, 8-10, 12-15, 17-18, 20-22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rathunde (Us 6,574,477 B1) in view of Clayton et al. (Us 6,681,001 B1).

   Regarding **claim 1**, Rathunde teaches a switch (MSC 4 in Fig. 1) capable of handling call connections between calling device and called devices on a plurality of trunk lines associated with said switch (the T1, E1, links for the call connection between calling device and called

device, the digital facilities interface DFI 42 terminates one end of link 40 and DFI goups 44, 46, terminate link groups 48 and 50, routing the call connection between link groups, handled by server application processors 32, 34 respectively, Fig. 1, col. 7, lines 1-20), the switch comprising a main processing unit (executive cellular processor 18, Fig. 1-2) capable of executing call process applications, where each of said call process applications is associated with one of said call connections (the ECP can be implemented by using lucent EMS for processing call connections, for configuring application processor radio software for each user, for the dynamic load balance, col. 6, lines 46-65), N call application nodes (the nodes for application processor AP 100, 102, 104, 106 in Fig. 2, having the radio control software RCS instances) capable of executing call process sever applications (the radio control software RCS for serving one or more cell base station run by application processor, col. 2, lines 3-11), wherein a first call process sever application is executed on a first one of said N call application nodes (the first server application RCS instance 60 run on AP 32, Fig. 1, col. 7, lines 21-42) and is associated with a similar second call process server application executed on a second one of said N call application nodes separate from said first call application node (the RCS 62 run on AP 34, Fig. 1, col. 7, lines 21-42), said first and second call process sever applications thereby forming a first loading sharing group server application (at least two Aps as a mated-pair for dynamic load balancing in col. 12, lines 57-60; the picking up of processing RCS by two of the remaining Aps in col. 11, lines 47-50; the traffic overloaded at AP 34, the underutilized at AP 32, the dynamic load balancing by transferring active RCS processing in col. 8, lines 10-32), Wherein said each call process application sends a call process service request to said first load sharing group server

application and said first load sharing group sever application selects one of the first and second call process server applications to perform said request call process service according to load distribution algorithm (the selecting of server applications RCS instances in Aps 124, 128 for sharing the load distributed from AP 122 in col. 11, lines 41-59; the first application processor in the <u>application processor group</u> runs primary radio control software instances in an "active" mode on behalf of a defined <u>group</u> of cells, and a second application processor in the <u>application processor group</u> runs secondary radio control software instances in a "standby" mode on behalf of the cells, the primary/active radio control software instances running on the first application processor <u>are mated with</u> corresponding secondary/standby radio control software instances running on the second application processor. Each application processor running a primary/active or secondary/standby radio control software instance for a particular cell has a signaling link to that cell connected through a common subtending network switching element, in col. 4, lines 8-30; for receiving call connection request of base stations from a application processor AP, to support links ding to several subtending cells, col. 1, lines 42-64). Rathunde teaches the executive cellular processor ECP 18 can be Lucent EMS software product 22 to allow service provider to configure the application processor with RCS for dynamic load sharing (col. 6, lines 46-65). Rathunde fail to teach the client application associated with one of the call connections, However, Clayton teaches the client application software 80, the server application software 96 in Fig. 3, col. 11, line 52 to col. 12 line 49, abstract; where the client application 80 has telephone application program interface for efficiently providing message exchange for audio signals between computer system and a telecommunication unit). Clayton teaches an efficient

technique for solving problem with improved interface between telecommunication equipment and software processing systems (col. 2, line 31 to col. 3, line 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Rathunde with Clayton's's client application 80, server application 96, such that interface between the telephone equipment and computer application could be better.

Regarding **claim 2,** Rathunde teaches the load distribution algorithm distributes new call process services requests in an alternating manner between said first and second call process server application (the redesignating RCS instance as a standby RCS instance, or vice versa, abstract; the mated pair and each application processor running a primary/active or second/standby RCS for a particular cell, for the dynamic load balancing in col. 4, lines 8-22; the redistribution the active, standby, primary, secondary RCS instances between application processors Aps in col. 5, lines 46-50).

Regarding **claim 3**, Rathunde teaches the load distribution algorithm distributes new call process service request according to a current process load of the first call process server application and a current call process load of the second call process server application (col. 8, lines 16-32, where the dynamic load balancing for the application processors Aps 32 and 34 are made base on their current loadings, by transferring active RCS processing from the over utilized AP 34; the AP 122 failed to process call, the eight RCS instance distributed equally to Aps 124, 128 in Fig. 4, col. 11, lines 50-59; the current load bottle neck is reported due to high utilization, dropped calls in col. 9, lines 44-66).

Regarding **claim 5,** Rathunde teaches the first primary-backup group server application comprising a first primary call process executed on the first call application node (the

redistributing of the standby-active, primary-secondary; the primary application processor in an application processor group may run eight primary/active RCS on behalf of a defined cell group, and two secondary application processors in application processor group may each run four secondary/standby RCS in col. 5, lines 42-61) and a first backup call process associated with said first primary call process (the standby RCS for backup call process run by RCS in the eight primary RCS due to redistributing active-standby, primary-secondary, col. col. 5, lines 42-61).

Regarding **claim 6,** Rathunde teaches the state information associated with the first primary call process is mirrored to said first backup call process associated with said first primary call process (the shifting the load to the secondary/standby RCS 110 for re-homing, deleted, and reconstituted on the AP 98 as a new RCS 114 in col. 10, lines 27-40; the reconfiguring or RCS instances in col. 10, lines 41-66).

Regarding **claim 8**, Rathunde teaches the first backup call process resides on a call application node separate from said first call application node (the new, first back up, standby RCS instance at node 114 is separate from the first call application node 108 in Fig. 2).

Regarding **claim 9**, Rathunde teaches the second primary-backup group server application (new standby RCS in 114) comprises a second primary call process (primary RCS in 114) executed on said second call application node (114) and a second backup call process associated with said second primary call process (the call link 119 of the new standby RCS at 114 for backing up active RCS in node 108, other than a old, first, standby RCS in node 110).

Regarding **claim 10**, Rathunde teaches state information associated with said second primary call process is mirrored to said second backup call process associated with said second

primary call process, just like the shifting the load to the secondary/standby RCS 110 for re-homing, deleted, and reconstituted on the AP 98 as a new RCS 114 in col. 10, lines 27-40; the reconfiguring or RCS instances in col. 10, lines 41-66, due to dynamic load balancing for dynamically mirror a candidate RCS to the second backup, standby call process associated with said second primary call process.

Regarding **claim 12**, Rathunde teaches the second backup call process resides on a call application node separate from said second call application node (the new, second backup, standby RCS in node 114 is separate from the second standby RCS in call application node 110, Fig. 2, for backing up active RCS in node 108, Fig. 2).

Regarding **claim 13**, Rathunde teaches a wireless network (Fig. 1, wireless communication network 2) a plurality of base stations (base stations in col. 1, line 52; microcell, modcell 6 in Fig. 1; UCELL 1-3 in Fig. 2) capable of communicating with a plurality of mobile stations in a coverage area of wireless network (the radio unit located in a cell managed by base station, the wireless network 2, in col. 1, lines 27-64), a mobile switching center (MSC 4 in Fig. 1) coupled to base stations (base stations in col. 1, line 52; microcell, modcell 6 in Fig. 1; UCELL 1-3 in Fig. 2, col. 1, lines 27-64) and to a public switch telephone network (the PSTN in Fig. 2) by plurality of trunk lines (link group 48, 50, T1, E1 40), wherein said MSC is capable of handling call connections between calling device and called devices on a plurality of trunk lines associated with said switch (the T1, E1, links for the call connection between calling device and called device, the digital facilities interface DFI 42 terminates one end of link 40 and DFI goups 44, 46, terminate link groups 48 and 50, routing the call connection between link groups, handled by server application processors 32, 34

respectively, Fig. 1, col. 7, lines 1-20), the switch comprising a main processing unit (executive cellular processor 18, Fig. 1-2) capable of executing call process applications, where each of said call process applications is associated with one of said call connections (the ECP can be implemented by using lucent EMS for processing call connections, for configuring application processor radio software for each user, for the dynamic load balance, col. 6, lines 46-65), N call application nodes (the nodes for application processor AP 100, 102, 104, 106 in Fig. 2, having the radio control software RCS instances) capable of executing call process sever applications (the radio control software RCS for serving one or more cell base station run by application processor, col. 2, lines 3-11), wherein a first call process sever application is executed on a first one of said N call application nodes (the first server application RCS instance 60 run on AP 32, Fig. 1, col. 7, lines 21-42) and is associated with a similar second call process server application executed on a second one of said N call application nodes separate from said first call application node (the RCS 62 run on AP 34, Fig. 1, col. 7, lines 21-42), said first and second call process sever applications thereby forming a first loading sharing group server application (at least two Aps as a mated-pair for dynamic load balancing in col. 12, lines 57-60; the picking up of processing RCS by two of the remaining Aps in col. 11, lines 47-50; the traffic overloaded at AP 34, the underutilized at AP 32, the dynamic load balancing by transferring active RCS processing in col. 8, lines 10-32), Wherein said each call process application sends a call process service request to said first load sharing group server application and said first load sharing group sever application selects one of the first and second call process server applications to perform said request call process service according to load distribution algorithm (the selecting of server applications

RCS instances in Aps 124, 128 for sharing the load distributed from AP 122 in col. 11, lines 41-59; the first application processor in the application processor group runs primary radio control software instances in an "active" mode on behalf of a defined group of cells, and a second application processor in the application processor group runs secondary radio control software instances in a "standby" mode on behalf of the cells, the primary/active radio control software instances running on the first application processor are mated with corresponding secondary/standby radio control software instances running on the second application processor. Each application processor running a primary/active or secondary/standby radio control software instance for a particular cell has a signaling link to that cell connected through a common subtending network switching element, in col. 4, lines 8-30; for receiving call connection request of base stations from a application processor AP, to support links ding to several subtending cells, col. 1, lines 42-64). Rathunde teaches the executive cellular processor ECP 18 can be Lucent EMS software product 22 to allow service provider to configure the application processor with RCS for dynamic load sharing (col. 6, lines 46-65). Rathunde fail to teach the client application associated with one of the call connections, However, Clayton teaches the client application software 80, the server application software 96 in Fig. 3, col. 11, line 52 to col. 12 line 49, abstract; where the client application 80 has telephone application program interface for efficiently providing message exchange for audio signals between computer system and a telecommunication unit). Clayton teaches an efficient technique for solving problem with improved interface between telecommunication equipment and software processing systems (col. 2, line 31 to col. 3, line 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to modify Rathunde with Clayton's's client application 80, server application 96, such that interface between the telephone equipment and computer application could be better.

Regarding **claim 14**, Rathunde teaches the load distribution algorithm distributes new call process services requests in an alternating manner between said first and second call process server application (the redesignating RCS instance as a standby RCS instance, or vice versa, abstract; the mated pair and each application processor running a primary/active or second/standby RCS for a particular cell, for the dynamic load balancing in col. 4, lines 8-22; the redistribution the active, standby, primary, secondary RCS instances between application processors Aps in col. 5, lines 46-50).

Regarding **claim 15**, Rathunde teaches the load distribution algorithm distributes new call process service request according to a current process load of the first call process server application and a current call process load of the second call process server application (col. 8, lines 16-32, where the dynamic load balancing for the application processors Aps 32 and 34 are made base on their current loadings, by transferring active RCS processing from the over utilized AP 34; the AP 122 failed to process call, the eight RCS instance distributed equally to Aps 124, 128 in Fig. 4, col. 11, lines 50-59; the current load bottle neck is reported due to high utilization, dropped calls in col. 9, lines 44-66).

Regarding **claim 17**, Rathunde teaches the first primary-backup group server application comprising a first primary call process executed on the first call application node (the redistributing of the standby-active, primary-secondary; the primary application processor in an application processor group may run eight primary/active RCS on behalf of a defined cell

group, and two secondary application processors in application processor group may each run four secondary/standby RCS in col. 5, lines 42-61) and a first backup call process associated with said first primary call process (the standby RCS for backup call process run by RCS in the eight primary RCS due to redistributing active-standby, primary-secondary, col. col. 5, lines 42-61).

Regarding **claim 18**, Rathunde teaches the state information associated with the first primary call process is mirrored to said first backup call process associated with said first primary call process (the shifting the load to the secondary/standby RCS 110 for re-homing, deleted, and reconstituted on the AP 98 as a new RCS 114 in col. 10, lines 27-40; the reconfiguring or RCS instances in col. 10, lines 41-66).

Regarding **claim 20**, Rathunde teaches the first backup call process resides on a call application node separate from said first call application node (the new, first back up, standby RCS instance at node 114 is separate from the first call application node 108 in Fig. 2).

Regarding **claim 21**, Rathunde teaches the second primary-backup group server application (new standby RCS in 114) comprises a second primary call process (primary RCS in 114) executed on said second call application node (114) and a second backup call process associated with said second primary call process (the call link 119 of the new standby RCS at 114 for backing up active RCS in node 108, other than a old, first, standby RCS in node 110).

Regarding **claim 22**, Rathunde teaches state information associated with said second primary call process is mirrored to said second backup call process associated with said second primary call process, just like the shifting the load to the secondary/standby RCS 110 for re-homing, deleted, and reconstituted on the AP 98 as a new RCS 114 in col. 10, lines 27-40;

the reconfiguring or RCS instances in col. 10, lines 41-66, due to dynamic load balancing for dynamically mirror a candidate RCS to the second backup, standby call process associated with said second primary call process.

Regarding **claim 24**, Rathunde teaches the second backup call process resides on a call application node separate from said second call application node (the new, second backup, standby RCS in node 114 is separate from the second standby RCS in call application node 110, Fig. 2, for backing up active RCS in node 108, Fig. 2).

4. Claims 4, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rathunde in view of Clayton, as applied to claim 3 above, and further in view of Gehi et al. (US 6,134,216).

Regarding **claim 4**, Rathunde and Clayton fail to teach the current call process load of first call process server application at a level substantially equal to the current call process load of the second call process server application. However, Gehi et al. (Gehi) teaches the overload control of processor groups for running application (abstract), adjusting the processor over level for the same overload level in the processor group, or toward the average overload level, for the substantially equal level, in col. 10, line 63 to col. 11, line 44). Gehi teaches the improved technique for processor overload control for responding to overload condition rapidly (abstract) with long term, short term consideration (col. 1, line 50 to col. 2, line 26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Rathunde with Gehi's adjusting overload level for process, such that the processor overload condition could be rapidly solved.

Regarding **claim 16**, Gehi taught in claim 4 above the current call process load of first call process server application at a level substantially equal to the current call process load of the second call process server application (col. 10, line 63 to col. 11, line 44).

5. Claims 7, 11, 19, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rathunde in view of Clayton, as applied to claim 6 above, and further in view of Hayashi et al. (US 6,598,071 B1).

Regarding **claim 7**, Rathunde and Clayton fail to teach the first backup call process resides on the first call application node. However, Hayashi et al. (Hayashi) teaches the first backup sever information 210 is resided with application processor 205, Fig. 2, in a backup server node 102 for being selected as the backup node based not the stored backup server information 210, col.5, line 50 to col. 6, line 10; col. 3, line 55 to col. 4, line 6; for changing the group address, based on the traffic status, abstract, Fig. 7). Hayashi teaches an improved technique for solving traffic loading at a server node by dynamically switching server and serving group address, with low cost (abstract, col. 1, line 56 to col. 2, line 55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Rathunde with Hayashi's such that the server node can reduce the call traffic loading for application processor, by utilizing backup server information.

Regarding **claim 11**, Hayashi taught the second backup call process resides on said second call application node (the backup server information 210 is resided with the application processor 205, Fig. 2, in a backup server node 102 for being selected as the backup node, col.5, line 50 to col. 6, line 10; col. 3, line 55 to col. 4, line 6).

Regarding **claim 19**, Hayashi taught the first backup call process resides on the first call application node (the backup server information 210 is resided with the application processor 205, Fig. 2, in a backup server node 102 for being selected as the backup node, col.5, line 50 to col. 6, line 10; col. 3, line 55 to col. 4, line 6).

Regarding **claim 23**, Hayashi taught the second backup call process resides on said second call application node (the backup server information 210 is resided with the application processor 205, Fig. 2, in a backup server node 102 for being selected as the backup node, col.5, line 50 to col. 6, line 10; col. 3, line 55 to col. 4, line 6).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

   A. US 2003/0065,921 A1, April 2003, Chang teaches the load balancing 800 for the application a-n with server 200a-m.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)-305-4385.

   Any response to this action should be mailed to:

   Commissioner of Patents and Trademarks

   Washington, D.C. 20231

   or faxed to: (703) 872-9306 (for Technology Center 2600 only)

   Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow C.C.

August 18, 2003.

NICK CORSARO
PRIMARY EXAMINER